

GUI Language Version. The currently selected language.

Internet Port Settings

MAC Address. The Ethernet MAC address of the DSL port.

IP Address. The DSL port IP address. If no address is shown, the modem router cannot connect to the Internet.

Network Type. The value depends on your ISP.

IP Subnet Mask. The DSL port IP subnet mask.

Gateway IP Address. The IP address used as a gateway to the Internet for computers configured to use DHCP.

Domain Name Server. The modem router DNS server IP addresses. These addresses are usually obtained dynamically from the ISP.

LAN Port (Local Ports)

MAC Address. The modem router LAN port Ethernet MAC address.

IP Address. The modem router LAN port IP address. The default is 192.168.0.1.

DHCP. If Off, the modem router does not assign IP addresses to PCs on the LAN. If On, the modem router does assign IP addresses to PCs on the LAN.

IP Subnet Mask. The IP subnet mask used by the modem router LAN. The default is 255.255.255.0.

Modem

ADSL Firmware Version. The version of the firmware.

Modem Status. The connection status of the modem.

DownStream Connection Speed. The modem receives data from the DSL line at this speed.

UpStream Connection Speed. The modem transmits data to the DSL line at this speed.

VPI. The Virtual Path Identifier setting.

VCI. The Virtual Channel Identifier setting.

Wireless Port

See [Wireless Settings Screen](#) on page 33 for a more detailed description of these settings.

Name (SSID). The Wi-Fi network name (service set ID) for the wireless network.

Region. The country where the unit is set up for use.

Channel. The current channel, which determines the operating frequency.

Mode. The current mbps setting.

Wireless AP. Indicates if the access point feature is enabled. If disabled, the Wireless LED on the front panel is off.

Broadcast Name. Indicates if the modem router is configured to broadcast its SSID.

Show Statistics

Click the **Show Statistics** button on the Router Status screen to display a screen similar to this:

System Up Time 00:18:53							
Port	Status	TxPkts	RxPkts	Collisions	Tx B/s	Rx B/s	Up Time
WAN	PPPoE	--	--	--	--	--	--
LAN1	Link down	12349	30556	0	13171	2989	00:18:40
LAN2	Link down						
LAN3	Link down						
LAN4	100M/Full						
WLAN	145M	0	0	0	0	0	00:18:06

ADSL Link	Downstream	Upstream
Link Rate	0 Kbps	0 Kbps
Line Attenuation	0 dB	0 dB
Noise Margin	0 dB	0 dB

Poll Interval: (secs)

Port

The statistics for the WAN (Internet), LAN (local), and wireless LAN (WLAN) ports. For each port, the screen displays the following:

- **Status.** The link status of the port.
- **TxPkts.** The number of packets transmitted since reset or manual clear.
- **RxPkts.** The number of packets received since reset or manual clear.
- **Collisions.** The number of collisions since reset or manual clear.
- **Tx B/s.** The current line utilization—percentage of current bandwidth used.
- **Rx B/s.** The average line utilization.
- **Up Time.** The time elapsed since the last power cycle or reset.

ADSL Link Downstream or Upstream

The statistics for the upstream and downstream DSL link. These statistics are of interest to your technical support representative if you have problems obtaining or maintaining a connection.

- **Connection Speed.** Typically, the downstream speed is faster than the upstream speed.
- **Line Attenuation.** The line attenuation increases the farther you are physically located from your ISP's facilities.
- **Noise Margin.** The signal-to-noise ratio, which is a measure of the quality of the signal on the line.
- **Poll Interval.** The interval at which the statistics are updated in this window. Click the **Stop** button to freeze the display.

Connection Status

In the Router Status screen, click the **Connection Status** button to display a screen similar to this:

The screenshot shows a window titled "Connection Status" with a table of connection parameters and control buttons below it.

Connection Time	00:00:00
Connection Status	Disconnected
Negotiation	--
Authentication	--
IP Address	0.0.0.0
Subnet Mask	0.0.0.0

Below the table are three buttons: "Connect", "Disconnect", and "Close Window".

- **Connection Time.** The time elapsed since the last connection to the Internet through the DSL port.
- **Connecting to sender.** The connection status.
- **Negotiation.** On or Off.
- **Authentication.** On or Off.
- **Getting IP Address.** The IP address assigned to the WAN port by the ISP.
- **Getting Network Mask.** The network mask assigned to the WAN port by the ISP.

View Attached Devices

The Attached Devices screen shows all IP devices that the modem router has discovered on the local network.

Select **Maintenance > Attached Devices**.

Attached Devices			
Wired Devices			
#	IP Address	Device Name	MAC Address
1	192.168.0.2	TECHPUBS	00:1A:6B:6D:8F:19

Wireless Devices (Wireless intruders also show up here)			
#	IP Address	Device Name	MAC Address

For each device, the table shows the IP address, the device name if available, and the Ethernet MAC address. Note that if the modem router is rebooted, the table data is lost until the modem router rediscovers the devices. To force the modem router to look for attached devices, click the **Refresh** button.

Run Diagnostic Utilities

The modem router has a diagnostics feature. Select **Maintenance > Diagnostics** to display the following screen.

Diagnostics

Ping an IP address or Host Name
 IP Address or Host Name

Perform a DNS Lookup
 Internet Name:
 IP Address:
 DNS Server:

Display the Routing Table

Reboot the Router

You can perform the following functions:

- Ping an IP address or host name to test connectivity to see if you can reach a remote host.
- Perform a DNS lookup to test if an Internet name resolves to an IP address to verify that the DNS server configuration is working.
- Display the routing table to identify what other modem routers the modem router is communicating with.
- Reboot the modem router to enable new network configurations to take effect or to clear problems with the modem router's network connection.

USB Storage

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This chapter describes how to access and configure a USB storage drive attached to your modem router.



Figure 8. USB port on rear panel.

The USB port on the modem router can be used only to connect USB storage devices like flash drives or hard drives. Do not connect computers, USB modems, printers, CD drives, or DVD drives to the this USB port.

This chapter includes the following sections:

- *USB Drive Requirements*
- *You can enable the HTTP (via Internet) option on the Advanced USB Storage screen to share large files. This option supports downloading files only.*
- *USB Storage Basic Settings*
- *Edit a Network Folder*
- *USB Storage Advanced Settings*
- *Safely Remove USB Drive*
- *Approved USB Devices (Advanced USB Settings)*
- *Connect to the USB Drive from a Remote Computer*
- *Connect to the USB Drive with Microsoft Network Settings*

USB Drive Requirements

The modem router works with 1.0 and 1.1 (USB Full Speed) and 2.0 (USB High Speed) standards. The approximate USB bus speeds are shown in the following table. Actual bus speeds can vary, depending on the CPU speed, memory, speed of the network, and other variables.

Table 2. USB Drive Speeds

Bus	Speed/Sec
USB 1.1	12 Mbits
USB 2.0	480 Mbits

The modem router should work with most USB-compliant external flash and hard drives. For the most up-to-date list of USB drives supported by the modem router, go to:

<http://kbserver.netgear.com/readyshare>

The modem router supports both read and write for FAT16, FAT32, NTFS, and Linux file systems (EXT2 and EXT3).

Note: Some USB external hard drives and flash drives require drivers to be loaded in to the PC before the PC can access the USB device. Such USB devices do not work with the modem router.

ReadySHARE Access

Once you have set up your modem router, you can connect any USB storage device and share the contents with other users on your network.

You can access your USB device in any of the following ways:

- On Windows 7, Windows XP, Windows Vista, and Windows 2000 systems, select **Start > Run**, and enter **\\readyshare** in the dialog box. Click **OK**.
- On Windows 7, Windows XP, Windows Vista, and Windows 2000 systems, open Internet Explorer or Safari, and enter **\\readyshare** in the address bar.
- On Mac OS X (version 10.2 or later), enter **smb://readyshare** in the address bar.
- In My Network Places, enter **\\readyshare** in the address bar.

File-Sharing Scenarios

You can share files on the USB drive for a wide variety of business and recreational purposes. The files can be any PC, Mac, or Linux file type including text files, Word, PowerPoint, Excel, MP3, pictures, and multimedia. USB drive applications include:

- Sharing multimedia with friends and family such as MP3 files, pictures, and other multimedia with local and remote users.
- Sharing resources on your network. You might want to store files in a central location so that you do not have to power up a computer to perform local sharing. In addition, you can share files between Macintosh, Linux, and PC computers by using the USB drive as a go-between across the systems.
- Sharing files such as Word documents, PowerPoint presentations, and text files with remote users.

A few common uses are described in the following sections.

Sharing Photos

You can create your own central storage location for photos and multimedia. This eliminates the need to log in to (and pay for) an external photo-sharing site.

➤ **To share files with your friends and family:**

1. Insert your USB drive into the USB port on the modem router either directly or with a USB cable.

Computers on your local area network (LAN) can automatically access this USB drive using a web browser or Microsoft Networking.

2. If you want to specify read-only access or to allow access from the Internet, see [Approved USB Devices \(Advanced USB Settings\)](#) on page 74.

Storing Files in a Central Location for Printing

This scenario is for a family that has one high-quality color printer directly attached to a computer, but not shared on the local area network (LAN). This family does not have a print server.

- One family member has photos on a Macintosh computer that she wants to print.
- The photo-capable color printer is directly attached to a PC, but not shared on the network.
- The Mac and PC are not visible to each other on the network.

➤ **To print photos from a Mac on the printer attached to a PC:**

1. On the Mac, access the USB drive by typing `\\readyshare` in the address field of a web browser. Then copy the photos to the USB drive.
2. On the PC, use a web browser or Microsoft Networking to copy the files from the USB drive to the PC. Then print the files.

Sharing Large Files over the Internet

Sending files that are larger than 5 MB can pose a problem for many email systems. The modem router allows you to share very large files such as PowerPoint presentations or .zip files over the Internet. FTP can be used to easily download shared files from the modem router.

Sharing files with a remote colleague involves the following considerations:

- There are two user accounts: admin and guest. The password for admin is the same one that you use to access the modem router. By default, it is **password**. The guest user account has no password.
- On the FTP site, the person receiving the files should use the guest user account and enter any password (FTP requires that you type something in the password field).
- Be sure to select the **FTP (via Internet)** check box in the USB Storage Advanced Settings screen. This option supports both downloading and uploading of files.

Note: You can enable the HTTP (via Internet) option on the Advanced USB Storage screen to share large files. This option supports downloading files only.

USB Storage Basic Settings

You can view or edit basic settings for the USB storage device attached to your modem router. Select **USB > Basic Settings**. The following screen displays:

USB Storage (Basic Settings)

Network/Device Name: [\\readyshare](#)

Available Network Folders

Share Name	Read Access	Write Access	Volume Name	Total Space	Free Space
\\readyshare\USB Storage	All - no password	All - no password	U:\	HP	1.8 GB 914 MB

If you logged in to the modem router before you connected your USB device, you might not see your USB device in the modem router screens until you log out and then log in again. This screen includes the following fields and buttons:

- **Network Device Name.** The default is \\readyshare. This is the name used to access the USB device connected to the modem router.

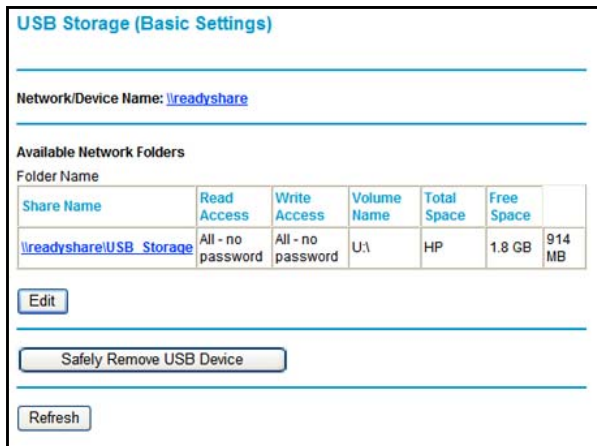
- **Folder Name.** Full path of the used by the Network folder.
- **Volume Name.** Volume name from the storage device (either USB drive or HDD).
- Total/Free Space. Shows the current utilization of the storage device.
- **Share Name.** You can click the name shown, or you can type it in the address field of your Web browser.

If Not Shared is shown, then the default share has been deleted and no other share for the root folder exists. Click the link to change this setting.

- **Read/Write Access.** Shows the network folder permissions and access controls.
 - All no password allows all users to access the network folder.
 - admin uses the same password that you use to log in to the modem router main menu.
- **Edit.** You can click the **Edit** button to edit the Available Network folder settings. See [Edit a Network Folder](#) on page 70.
- **Safely Remove USB Device.** Click this button to safely remove the USB device attached to your modem router. See [Safely Remove USB Drive](#) on page 73.

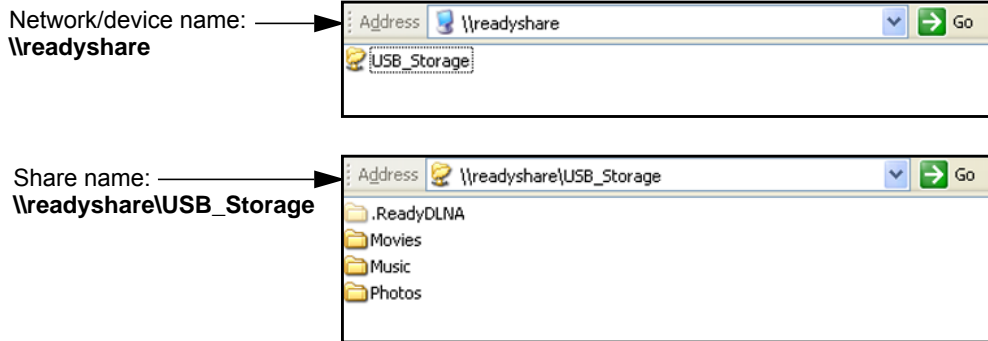
➤ **To access a USB device attached to the modem router USB port:**

1. Select **USB > Basic Settings**. The following screen displays:



By default, the USB device is available to all computers on your local area network (LAN).

- To access your USB device, click the share name or type **\\readyshare** in the address field of your Web browser.



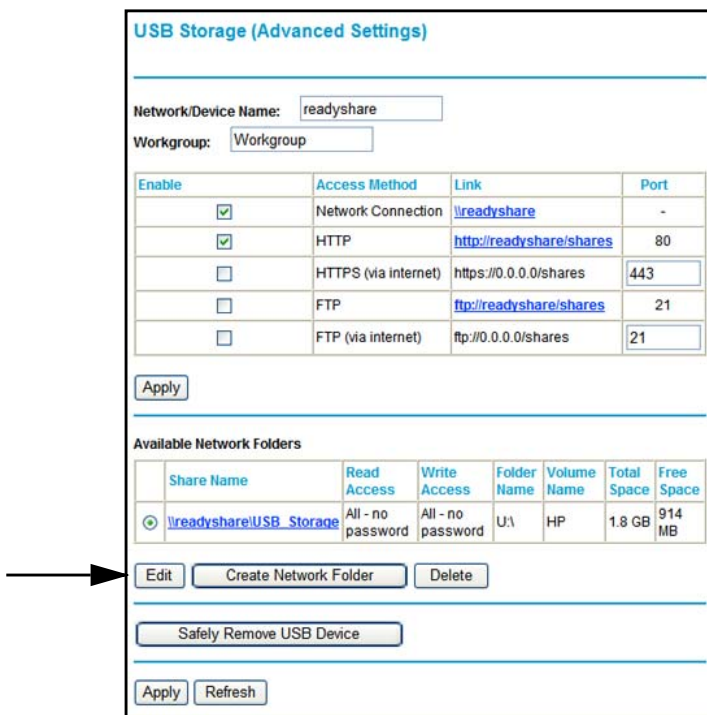
If you logged in to the modem router before you connected your USB device, you might not see your USB device in the modem router screens until you log out and then log in again.

Edit a Network Folder

You can use the Edit button on either the USB Storage (Basic Settings) or USB Storage (Advanced Settings) screen.

- **To edit a network folder:**

- Select **USB > Advanced Settings**. The USB Storage (Advanced Settings) screen displays:



- Click the **Edit** button

- Click **Apply** for your changes to take effect.

USB Storage Advanced Settings

To view or change advanced USB settings, select **USB > Advanced Settings**. The USB Storage (Advanced Settings) screen displays:

USB Storage (Advanced Settings)

Network/Device Name:

Workgroup:

Enable	Access Method	Link	Port
<input checked="" type="checkbox"/>	Network Connection	\\readyshare	-
<input checked="" type="checkbox"/>	HTTP	http://readyshare/shares	80
<input type="checkbox"/>	HTTPS (via internet)	https://0.0.0.0/shares	443
<input type="checkbox"/>	FTP	ftp://readyshare/shares	21
<input type="checkbox"/>	FTP (via internet)	ftp://0.0.0.0/shares	21

Available Network Folders

Share Name	Read Access	Write Access	Folder Name	Volume Name	Total Space	Free Space
<input checked="" type="checkbox"/> \\readyshare\USB_Storage	All - no password	All - no password	U:\	HP	1.8 GB	914 MB

You can use this screen to specify access to the USB storage device. The settings are as follows:

- Network Device Name.** The default is readyshare. This is the name used to access the USB device connected to the modem router from your computer.
- Workgroup.** If you are using a Windows Workgroup rather than a domain, the workgroup name is displayed here.

Access Method

- Network Connection.** Enabled by default, this allows all users on the LAN to have access to the USB drive.
- HTTP.** Disabled by default. If you enable this setting, you can type **http://readyshare** to access the USB drive.
- HTTP (via Internet).** Disabled by default. If you enable this settings, remote users can type **http://readyshare** to access the USB drive over the Internet.
- FTP.** Disabled by default.

- **FTP (via Internet).** Disabled by default. If you enable this settings, remote users can access the USB drive via FTP over the Internet.

Available Network Folders

- **Folder Name.** Full path of the Network folder.
- **Volume Name.** Volume name from the storage device (either USB drive or HDD).
- **Total Free Space.** The space currently available on the storage device.
- **Share Name.** You can click the name shown or you can type it into the address field of your Web browser. If Not Shared is shown, then the default share has been deleted and no other share for the root folder exists. Click the link to change this setting.
- **Read/Write Access.** Shows the permissions and access controls on the Network folder. Selecting **All no password** allows all users to access the Network folder. You are prompted to enter the same password that you use to log in to the modem router.

Create a Network Folder

You can create a network folder on the USB device that is attached to the USB port on the rear panel of the modem router.

➤ **To create a network folder:**

1. From the USB Storage (Advanced Settings) screen, click the **Create Network Folder** button to open the Create a Network Folder screen:

The screenshot shows a web-based form titled "Create Network Folder". The form has several input fields and dropdown menus. The "USB Device" field is set to "U: (HP)". The "Folder" field is empty, with a "Browse" button to its right. The "Share Name" field is empty. The "Read Access" and "Write Access" fields are both set to "All - no password". At the bottom of the form, there are two buttons: "Apply" and "Close Window".

2. Type a name in the Folder field.
 - You can specify the folder's share name, read access, and write access from All-no password to admin.
 - The password for admin is the same one that is used to log in to the modem router main menu. By default it is password.
3. Click **Apply** so that your changes take effect.

Safely Remove USB Drive

To unmount a USB disk drive so that no users can access it, from the USB Settings screen, click the **Safely Remove USB** button. This takes the drive offline.



CAUTION:

Unmount the USB drive before physically unplugging it from the modem router. If the USB disk is removed or a cable is pulled while data is being written to the disk, it could result in file or disk corruption.

Media Server Settings

You can set up the modem router to work with compatible media adapters. Select **USB Storage > Media Servers** to display the following screen:

Enable Media Server. If this feature is enabled, the DGN2200v3 can be located by compatible media adapters, using the UPnP AV standard developed by Intel and its partners. Media content on the DGN2200v3 (in the Content Directories that you specify) can then be accessed and played by the media adapters.

Server Name. The name of the media server that is displayed on client devices. Note that some special characters (such as " / \ [] ; | = , + * ? < > ` () # \$ %) and 2-byte characters cannot be used in the server name.

Content Directory. Specify the directories (folders) that the media server should scan for media content. You can specify up to four. Click the **Browse** button to locate and select the folder you want. Each directory can be limited to a certain media type. The default setting will scan for all content types. Note that some special characters (e.g. " \ : * ? < > | ' ` ") cannot be used in the folder names.

Approved USB Devices (Advanced USB Settings)

You can specify which USB devices are approved for use when connected to the modem router.

➤ **To allow only approved USB devices to be accessed:**

1. Select **Advanced > USB Settings**.

2. Click **Approved Devices**.

Volume Name	Device Name	Capacity

Volume Name	Device Name	Capacity
<input type="radio"/>	HP	v100w
		1.8 GB

3. On the USB Drive Approved Devices screen, select the USB device from the Available USB Devices list.
4. Click **Add**.
5. Select the **Allow only approved devices** check box.
6. Click **Apply** so that your change takes effect.

If you want to approve another USB device, you must first use the **Safely Remove USB Device** button to unmount the currently connected USB device. Connect the other USB device, and then repeat this process.

Connect to the USB Drive from a Remote Computer

To connect to the USB drive from remote computers using a Web browser, you use the modem router's Internet port IP address.

➤ **To connect to the modem router's USB drive using a Web browser:**

1. First, locate the Internet port IP address. You can view this in the Router Status screen.
 - a. Select **Maintenance > Router Status**.
 - b. Record the IP address that is listed for the Internet port. This is the IP address you can use to connect to the modem router remotely.
2. Use a web browser to connect to the modem router by typing **ftp://** and the Internet port IP address in the address field.

For example, type **ftp://10.1.65.4**. If you are using Dynamic DNS, you can type the DNS name rather than the IP address.

3. Type the name and password of the account that has access rights to the USB drive.
The directories of the USB drive that your account has access to display, for example, share/partition1/directory1. You can now read and copy files from the USB directory.

Connect to the USB Drive with Microsoft Network Settings

You can access the USB drive from local computers on your home or office network using Microsoft network settings. You must be running Microsoft Windows 2000, XP, or older versions of Windows with Microsoft networking enabled. You can use normal Explorer operations such as dragging and dropping, opening files, or cutting and pasting files from:

- Microsoft Windows Start menu, Run option
- Windows Explorer
- Network Neighborhood or My Network Place

Enabling File and Printer Sharing

Each computer's network properties have to be set to enable network communication with the USB drive. File and Printer Sharing for Microsoft networking have to be enabled, as described in the following sections.

Note: In Windows 2000 and Windows XP, File and Printer Sharing is enabled by default.

Configuring Windows 98SE and Windows ME

The easiest way to get to your network properties is to go to your desktop, right-click **Network Neighborhood** and then select **Properties**. File and Printer Sharing for Microsoft Windows should be listed. If not, click **Add** and follow the installation prompts.

Note: If you have any questions about File and Printer Sharing, contact Microsoft for assistance.

Configuring Windows 2000 and Windows XP

Right-click the network connection for your local area network. File and Printer Sharing for Microsoft Windows should be listed. If not, click **Install** and follow the installation prompts.

Advanced Settings

7

Configuring for unique situations

This chapter describes the advanced features of your modem router. The information is for users with a solid understanding of networking concepts who want to set the modem router up for unique situations such as when remote access from the Internet by IP or domain name is needed.

This chapter contains the following sections:

- *WAN Setup*
- *Dynamic DNS*
- *LAN Setup*
- *Quality of Service (QoS)*
- *Advanced Wireless Settings*
- *Remote Management*
- *Static Routes*
- *Universal Plug and Play*
- *Traffic Meter*
- *Wireless Bridging and Repeating Networks*
- *Change the Device Mode*

For information about the Port Forwarding/Port Triggering menu selection, see *Set Up Port Forwarding to Local Servers* on page 46 and *Set Up Port Triggering* on page 49.

For information about Advanced USB Settings, see *Approved USB Devices (Advanced USB Settings)* on page 74.

WAN Setup

Select **Advanced > WAN Setup** to display the following screen:

The screenshot shows the WAN Setup configuration interface. It includes the following elements:

- Disable Port Scan and DoS Protection:** A checkbox that is currently unchecked.
- Default DMZ Server:** A checkbox that is unchecked, followed by an IP address field containing 192.168.0.2.
- Respond to Ping on Internet Port:** A checkbox that is currently unchecked.
- MTU Size (in bytes):** A text input field containing the value 1492.
- NAT Filtering:** Two radio buttons, 'Secured' (which is selected) and 'Open'.
- Disable SIP ALG:** A checkbox that is currently unchecked.
- Disable IGMP Proxying:** A checkbox that is currently unchecked.
- Buttons:** 'Apply' and 'Cancel' buttons at the bottom of the form.

The following settings are available:

- **Disable Port Scan and DoS Protection.** The firewall protects your LAN against port scans and denial of service (DoS) attacks. This protection should be disabled only in special circumstances.
- **Default DMZ Server.** The default demilitarized zone (DMZ) server feature is helpful when you use online games and video conferencing applications that are incompatible with NAT. See [Default DMZ Server](#) on page 79.
- **Respond to Ping on Internet Port.** If you want the modem router to respond to a ping from the Internet, select this check box. This should be used only as a diagnostic tool, because it allows your modem router to be discovered. Do not select this check box unless you have a specific reason to do so.
- **MTU Size (in bytes).** The normal Maximum Transmit Unit (MTU) value for most Ethernet networks is 1500 bytes, or 1492 bytes for PPPoE connections. For some ISPs you might need to reduce the MTU. But this is rarely required, and should not be done unless you are sure it is necessary for your ISP connection.
- **NAT Filtering.** By default NAT filtering is used.
- **Disable SIP ALG.** The Session Initiation Protocol (SIP) Application Level Gateway (ALG) is enabled by default to optimize VoIP phone calls that use the SIP. The Disable SIP ALG check box allows you to disable the SIP ALG. Disabling the SIP ALG might be useful when running certain applications.
- **Disable IGMP Proxying.** The IGMP Proxying feature lets a LAN PC receive the multicast traffic pertaining to it from the Internet. Selecting this check box prevents this from occurring.

Default DMZ Server

The default demilitarized zone (DMZ) server feature is helpful when you use online games and video conferencing applications that are incompatible with NAT. The modem router is programmed to recognize some of these applications and to work correctly with them, but there are other applications that might not function well. In some cases, one local computer can run the application correctly if that computer's IP address is entered as the default DMZ server.

Note: For security reasons, you should avoid using the default DMZ server feature. When a computer is designated as the default DMZ server, it loses much of the protection of the firewall. If compromised via the Internet, the computer can be used to attack your network.

Incoming traffic from the Internet is usually discarded by the modem router unless the traffic is a response to one of your local computers or a service that you have configured in the Ports screen. Instead of discarding this traffic, you can have it forwarded to one computer on your network. This computer is called the default DMZ server.

➤ **To assign a computer or server to be a default DMZ server:**

1. In the WAN Setup screen, select the **Default DMZ Server** check box.

The screenshot shows the WAN Setup configuration page. The 'Default DMZ Server' checkbox is checked, and the IP address 192.168.0.2 is entered in the adjacent text boxes. An arrow points to the 'Default DMZ Server' checkbox. Other options include 'Disable Port Scan and DoS Protection', 'Respond to Ping on Internet Port', 'MTU Size (in bytes)' set to 1492, 'NAT Filtering' set to Secured, 'Disable SIP ALG', and 'Disable IGMP Proxying'. 'Apply' and 'Cancel' buttons are at the bottom.

2. Type the IP address for that server and click **Apply**.

Dynamic DNS

If your network has a permanently assigned IP address, you can register a domain name that is linked to your IP address by public Domain Name Servers (DNS). More commonly, Internet accounts have dynamically assigned IP addresses in which the IP addresses change frequently. In this case, use a commercial Dynamic DNS service to register your domain to its IP address and forward traffic directed at your domain to your current IP address.

The modem router has a client that can connect to a Dynamic DNS service provider. Once you set up Dynamic DNS in the modem router, when your IP address changes, your modem router contacts your Dynamic DNS service provider, logs in to your account, and registers your new IP address.

➤ To set up Dynamic DNS:

1. Select **Advanced > Dynamic DNS** to display the following screen.

2. Access the website of one of the Dynamic DNS service providers whose names appear in the Service Provider drop-down list, and register for an account. For example, for dyndns.org, go to www.dyndns.org.
3. Select the **Use a Dynamic DNS Service** check box.
4. Select the name of your Dynamic DNS service provider.
5. Type the host name that your Dynamic DNS service provider gave you. This is sometimes called the domain name. If your URL is myName.dyndns.org, your host name is myName.
6. Type the user name for your Dynamic DNS account.
7. Type the password (or key) for your Dynamic DNS account.
8. If your Dynamic DNS provider allows the use of wildcards in resolving your URL, you can select the **Use Wildcards** check box to activate this feature. For example, the wildcard feature causes *.yourhost.dyndns.org to be aliased to the same IP address as yourhost.dyndns.org.
9. Click **Apply** to save your settings.

If your ISP assigns a private WAN IP address such as 192.168.x.x or 10.x.x.x, the Dynamic DNS service does not work because private addresses are not routed on the Internet.

LAN Setup

The LAN Setup screen allows configuration of LAN IP services such as DHCP and Routing Information Protocol (RIP). The modem router is shipped preconfigured to use private IP addresses on the LAN side and to act as a DHCP server. The modem router's default LAN IP configuration is as follows:

- **LAN IP address.** 192.168.0.1
- **Subnet mask.** 255.255.255.0

These addresses are part of the private address range designated by the Internet Engineering Task Force (IETF <http://www.ietf.org>) for use in private networks, and should be suitable in most applications. If your network has a requirement to use a different IP addressing scheme, you can make those changes in the LAN Setup screen.

Note: If you change the LAN IP address of the modem router while connected through the browser, you are disconnected. To reconnect, open a new connection to the new IP address and log in.

➤ To change the LAN settings:

1. Select **Advanced > LAN Setup**.

LAN Setup

Device Name: DGN2200v3

LAN TCP/IP Setup

IP Address: 192 . 168 . 0 . 1

IP Subnet Mask: 255 . 255 . 255 . 0

RIP Direction: Both

RIP Version: Disable

Use Router as DHCP Server

Single/Start IP Address: 192 . 168 . 0 . 2

Finish IP Address: 192 . 168 . 0 . 254

Address Reservation

#	IP Address	Device Name	MAC Address

Add Edit Delete

Apply Cancel

2. Enter the LAN Setup configuration and click **Apply** to save your changes.

LAN Setup Screen Settings

- **Device Name.**

- **IP Address.** The LAN IP address of the modem router.
- **IP Subnet Mask.** The LAN subnet mask of the modem router. Combined with the IP address, the IP subnet mask allows a device to know which other addresses are local to it, and which have to be reached through a gateway or modem router.
- **RIP Direction.**
- **RIP Version.**
- **Use Router as DHCP Server.** By default, the modem router is a Dynamic Host Configuration Protocol (DHCP) server, allowing it to assign IP, DNS server, and default gateway addresses to all computers connected to the modem router's LAN. The assigned default gateway address is the LAN address of the modem router. IP addresses are assigned to the attached PCs from a pool of addresses specified in this screen. Each pool address is tested before it is assigned to avoid duplicate addresses on the LAN.

For most applications, the default DHCP and TCP/IP settings of the modem router are satisfactory.

- **Reserved IP Addresses Setup.** When you specify a reserved IP address for a computer on the LAN, that computer always receives the same IP address each time it accesses the modem router's DHCP server. Reserved IP addresses should be assigned to servers that require permanent IP settings.

IP Address Reservation

➤ To reserve an IP address:

1. Select **Advanced > LAN Setup** and click the **Add** button.
2. In the IP Address field, type the IP address to assign to the computer or server. Choose an IP address from the modem router's LAN subnet, such as 192.168.0.x.
3. Type the MAC address of the computer or server.

Tip: If the computer is already on your network, copy its MAC address from the Attached Devices screen and paste it here.

4. Click **Apply** to enter the reserved address into the table.

Note: *The reserved address is not assigned until the next time the computer contacts the modem router's DHCP server. Reboot the computer or access its IP configuration to force a DHCP release and renew.*

➤ To edit or delete a reserved address entry:

1. Select the radio button next to the reserved address that you want to edit or delete.
2. Click **Edit** or **Delete**.

Quality of Service (QoS)

Quality of Service (QoS) is an advanced feature that can be used to prioritize some types of traffic ahead of others. The modem router can provide QoS prioritization over the wireless link and on the Internet connection.

The modem router supports Wi-Fi Multimedia Quality of Service (WMM QoS) to prioritize wireless voice and video traffic over the wireless link. WMM QoS provides prioritization of wireless data packets from different applications based on four access categories: voice, video, best effort, and background. For an application to receive the benefits of WMM QoS, both it and the client running that application have to have WMM enabled. Legacy applications that do not support WMM, and applications that do not require QoS, are assigned to the best effort category, which receives a lower priority than voice and video.

➤ To set up QoS:

1. Select **Advanced > QoS Setup**.

2. Click **Setup QoS rule**. The QoS Priority Rule list displays:

#	QoS Policy	Priority	Description
1	MSN Messenger	High	MSN Messenger application
2	Yahoo Messenger	High	Yahoo Messenger application
3	IP Phone	Highest	IP Phone application
4	Vonage IP Phone	Highest	Vonage IP Phone application
5	NetMeeting	High	NetMeeting application
6	AIM	High	AIM application
7	Google Talk	Highest	Google Talk application
8	Netgear EVA	Highest	Netgear EVA application
9	Counter Strike	High	On-line gaming Counter Strike
10	Age of Empires	High	On-line gaming Age of Empires
11	Everquest	High	On-line gaming Everquest
12	Quake 2	High	On-line gaming Quake 2
13	Quake 3	High	On-line gaming Quake 3
14	Unreal Tourment	High	On-line gaming Unreal Tourment
15	Warcraft	High	On-line gaming Warcraft

3. To change a rule, select its radio button, scroll down and click **Edit**.
4. To add a custom rule, click **Add Priority Rule**.
5. Click **Apply** to save your changes and return to the QoS Setup screen.
6. In the QoS Setup screen, click **Apply**.

Advanced Wireless Settings

➤ To view or change advanced wireless settings:

1. Select **Advanced > Wireless Settings** to display the following screen:

Note: The advanced WPS settings section is not displayed if you selected WEP as the security option.

2. If you make changes, click **Apply**. Note that the WLAN settings come from the settings you made in the Wireless Settings screen (see [Wireless Settings Screen](#) on page 33).

Advanced Wireless Settings

- **Enable Wireless Router Radio.** When this check box is selected, the modem router works as an access point broadcasting a wireless signal.
- **Fragmentation Length.**
- **CTS/RTS Threshold.**
- **Preamble Mode.**

WPS Settings

Router's PIN. The PIN number that you use on a registrar (for example, from the Network Explorer on a Vista Windows PC) to configure the modem router's wireless settings through WPS. You can also find the PIN on the modem router label.

The PIN function might temporarily be disabled when the modem router detects suspicious attempts to break into the modem router's wireless settings by using the modem router's PIN through WPS. You can manually enable the PIN function by clearing the Disable Router's PIN check box.

Keep Existing Wireless Settings. By default, the Keep Existing Wireless Settings check box is selected. This allows the modem router to keep the same SSID and wireless security settings when WPS-enabled devices are added to the network.

If the Keep Existing Wireless Settings check box is not selected, the next time you use WPS to connect WPS-capable devices to your wireless network, the modem router generates a new random SSID and WPA/WPA2 passphrase. NETGEAR does not recommend this.

Wireless Card Access List

The Wireless Card Access List lets you restrict access to your network to a specific list of devices based on their MAC addresses.

➤ To set up a wireless card access list:

1. Select **Advanced > Wireless Settings**, and click the **Setup Access List** button to display the Wireless Card Access List screen:

Device Name	MAC Address

The Turn Access Control On check box is not selected so that any computer configured with the correct wireless network name (SSID) and passphrase to access the network.

2. Select the **Turn Access Control On** check box to enable access restriction by MAC address.
3. Click **Add** to add your computer's MAC address so that you do not lose your wireless connection when you click Apply. If you lose your wireless connection, you have to access

the wireless modem router from a wired computer or from a wireless computer that is on the access control list. The following screen displays:

The screenshot shows a web interface titled "Wireless Card Access Setup". It features a section for "Available Wireless Cards" with a table containing columns for "#", "Device Name", and "MAC Address". Below this is a "Wireless Card Entry" section with two input fields: "Device Name" and "MAC Address". At the bottom of the form are three buttons: "Add", "Cancel", and "Refresh".

4. If a wireless station that you want to add is connected to the network, select it from the Available Wireless Cards list and click **Add**.
5. You can enter MAC addresses manually. The MAC address is usually printed on the wireless computer or device, or it might be in the modem router's DHCP table. The MAC address is 12 hexadecimal digits.

You can copy and paste the MAC addresses from the modem router's Attached Devices screen (see [View Attached Devices](#) on page 63) into the MAC Address field. This screen shows computers connected to the network.

6. Click **Apply** to save your settings.

Remote Management

The Remote Management screen lets you allow a user or users on the Internet to configure, upgrade, and check the status of your modem router. Select **Advanced > Remote Management** to display this screen:

➤ To set up remote management:

1. Select the **Turn Remote Management On** check box.
2. Specify the external addresses that can access remote management. For security, restrict access to as few external IP addresses as practical. Select a radio button:
 - **Only This Computer.** Allow access from a single IP address on the Internet.
 - **IP Address Range.** Allow access from a range of IP addresses on the Internet.
 - **IP Address List.** Enter each IP address that should have access.
 - **Everyone.** Allow access from any IP address on the Internet.
3. Specify the port number to be used for accessing the modem router interface.

Web browser access usually uses the standard HTTP service port 80. For greater security, you can change it so the remote modem router interface uses a custom port by entering that number in the field provided. Choose a number between 1024 and 65535, but do not use the number of any common service port. The default is 8080, which is a common alternate for HTTP.

4. Click **Apply** to save your changes.

To access your modem router from the Internet, type your modem router's WAN IP address in your browser's Address field, followed by a colon (:) and the custom port number. For example, if your external address is 134.177.0.123 at port number 8080, enter the following in your browser: **http://134.177.0.123:8080**.

Note: The http:// has to be included in the address.

Static Routes

Static routes provide additional routing information to your modem router. Under normal circumstances, the modem router has adequate routing information after it has been configured for Internet access, and you do not need to configure additional static routes. You configure static routes only for unusual cases such as multiple routers or multiple IP subnets located on your network.

Static Route Example

As an example of when a static route is needed, consider the following case:

- Your primary Internet access is through a cable modem to an ISP.
- You have an ISDN router on your home network for connecting to the company where you are employed. This router's address on your LAN is 192.168.0.100.
- Your company's network address is 134.177.0.0.

When you first configured your modem router, two implicit static routes were created. A default route was created with your ISP as the modem router, and a second static route was created to your local network for all 192.168.0.x addresses. With this configuration, if you attempt to access a device on the 134.177.0.0 network, your modem router forwards your request to the ISP. The ISP forwards your request to the company where you are employed, and the request is likely to be denied by the company's firewall.

In this case you need to define a static route, telling your modem router that 134.177.0.0 should be accessed through the ISDN router at 192.168.0.100.

Static Routes

Route Name

Private

Active

Destination IP Address . . .

IP Subnet Mask . . .

Gateway IP Address . . .

Metric

In this example:

- The Destination IP Address and IP Subnet Mask fields specify that this static route applies to all 134.177.x.x addresses.
- The Gateway IP Address field specifies that all traffic for these addresses is to be forwarded to the ISDN router at 192.168.0.100.
- The value in the Metric field represents the number of routers between your network and the destination. This is a direct connection, so it can be set to the minimum value of 2.
- The Private check box is selected only as a precautionary security measure in case RIP is activated.

➤ **To add a static route:**

1. Select **Advanced > Static Routes** to display the following screen:

#	Active	Name	Destination	Gateway
<input type="button" value="Add"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>				

2. Click **Add** to open the following screen.

Static Routes

Route Name

Private

Active

Destination IP Address . . .

IP Subnet Mask . . .

Gateway IP Address . . .

Metric

3. Fill in the fields:
 - In the Route Name field, enter a route name for this static route. This name is for identification purpose only.
 - Select **Private** if you want to limit access to the LAN only. The static route will not be reported in RIP.
 - Select **Active** to make this route effective.
 - Enter the destination IP address of the final destination.
 - Enter the IP subnet mask for this destination. If the destination is a single host, type **255.255.255.255**.
 - Enter the gateway IP address, which has to be a router on the same LAN segment as the modem router.

- In the Metric field, enter a number between 2 and 15 as the metric value. This represents the number of routers between your network and the destination. Usually, a setting of 2 or 3 works.
4. Click **Apply** to save your changes. The Static Routes table is updated to show the new entry.

Universal Plug and Play

Universal Plug and Play (UPnP) helps devices, such as Internet appliances and computers, access the network and connect to other devices as needed. UPnP devices can automatically discover the services from other registered UPnP devices on the network.

➤ To set up UPnP:

1. Select **Advanced > UPnP** to display the following screen:

2. Specify the settings as follows:

- **Turn UPnP On.** UPnP can be enabled or disabled for automatic device configuration. The default setting for UPnP is enabled. If UPnP is disabled, the modem router does not allow any device to automatically control the resources, such as port forwarding (mapping), of the modem router.
- **Advertisement Period.** The advertisement period is how often the modem router advertises (broadcasts) its UPnP information. This value can range from 1 to 1440 minutes. The default period is 30 minutes. Shorter durations ensure that control points have current device status at the expense of additional network traffic. Longer durations might compromise the freshness of the device status but can significantly reduce network traffic.
- **Advertisement Time to Live.** This is measured in hops (steps) for each UPnP packet sent. A hop is the number of steps allowed to propagate for each UPnP advertisement before it disappears. The number of hops can range from 1 to 255. The default value is 4 hops, which works for most home networks. If you notice that some devices are not being updated or reached correctly, you might need to increase this value a little.
- **UPnP Portmap Table.** The UPnP Portmap Table displays the IP address of each UPnP device that is currently accessing the modem router and which ports (internal and external) that device has opened. The UPnP Portmap Table also displays what type of port is opened and if that port is still active for each IP address.

3. To save, cancel your changes, or refresh the table:
 - Click **Apply** to save the new settings to the modem router.
 - Click **Cancel** to disregard any unsaved changes.
 - Click **Refresh** to update the portmap table and to show the active ports that are currently opened by UPnP devices.

Traffic Meter

Traffic metering allows you to monitor the volume of Internet traffic passing through your modem router's Internet port. With the Traffic Meter utility, you can set limits for traffic volume, set a monthly limit, and get a live update of traffic usage.

➤ **To monitor traffic on your modem router:**

1. Select **Advanced > Traffic Meter**.

Traffic Meter

Internet Traffic Meter

Enable Traffic Meter

Traffic volume control by

No limit

Monthly limit (Mbytes)

Round up data volume for each connection by (Mbytes)

Connection time control

Monthly limit (Hours)

Traffic Counter

Restart traffic counter at : : am On the day of each month

Traffic Control

Pop up a warning message

Mbytes/Minutes before the monthly limit is reached

When the monthly limit is reached

Turn the Internet LED to flashing green/amber

Disconnect and disable the Internet connection

Internet Traffic Statistics

Start Date/Time: Wednesday, 31 Dec 1969 04:00 PM
 Current Date/Time: Wednesday, 31 Dec 1969 04:36 PM
 Traffic Volume Left: 0 Bytes

Period	Upstream (hh:mm)	Traffic Volume(MBytes)		
		Upload/Avg	Download/Avg	Total/Avg
Today	00:00	0.00	0.00	0.00
Yesterday	00:00	0.00	0.00	0.00
This week	00:00	0.00/0.00	0.00/0.00	0.00/0.00
This month	00:00	0.00/0.00	0.00/0.00	0.00/0.00
Last month	00:00	0.00/0.00	0.00/0.00	0.00/0.00

2. To enable the Traffic Meter, select the **Enable Traffic Meter** check box.
3. If you would like to record and restrict the volume of Internet traffic, select the **Traffic volume control by** radio button. You can select one of the following options for controlling the traffic volume:
 - **No limit.** No restriction is applied when the traffic limit is reached.

- **Download only.** The restriction is applied to incoming traffic only.
 - **Both directions.** The restriction is applied to both incoming and outgoing traffic.
4. You can limit the amount of data traffic allowed per month:
 - By specifying how many Mbytes per month are allowed.
 - By specifying how many hours of traffic are allowed.
 5. Set the Traffic Counter to begin at a specific time and date.
 6. Set up Traffic Control to issue a warning message before the monthly limit of Mbytes or hours is reached. You can select one of the following to occur when the limit is attained:
 - The Internet LED flashes green or amber.
 - The Internet connection is disconnected and disabled.
 7. Set up Internet Traffic Statistics to monitor the data traffic.
 8. Click the **Traffic Status** button if you want a live update on Internet traffic status on your modem router.
 9. Click **Apply** to save your settings.

Wireless Bridging and Repeating Networks

Note: If you want to use the Wireless Repeating feature, you have to go to the Wireless Settings screen and change the wireless security setting of the router to WEP or None, and you have to change the Channel field to a different setting than Auto, which is the default. For more information, see [Wireless Settings Screen](#) on page 33.

With the modem router, you can build large bridged wireless networks that form an IEEE 802.11n Wireless Distribution System (WDS). Using the modem router with other access points (APs) and wireless devices, you can connect clients using their MAC addresses rather than IP addresses. Here are some examples of wireless bridged configurations:

- **Point-to-point bridge.** The modem router communicates with another bridge-mode wireless station. See [Set Up a Point-to-Point Bridge](#) on page 94.
- **Multi-point bridge.** The modem router is the “master” for a group of bridge-mode wireless stations. Then all traffic is sent to this master, rather than to other access points. See [Set Up a Multi-Point Bridge](#) on page 95.
- **Repeater with wireless client association.** Sends all traffic to the remote access point. See [Repeater with Wireless Client Association](#) on page 96.

The wireless bridging and repeating feature uses the default security profile to send and receive traffic.

Select **Advanced > Wireless Repeating Function** to display the following screen:

- **Enable Wireless Repeating Function.** Select this check box if you want to use the wireless repeating function.
- **Disable Wireless Client Association.** If your modem router is the repeater, selecting this check box means that wireless clients cannot associate with it. Only LAN client associations are allowed.
 - If you are setting up a point-to-point bridge, select this check box.
 - If you want all client traffic to go through the other access point (repeater with wireless client association), leave this check box cleared.
- **Wireless MAC of this router.** This field displays the MAC address for your modem router for your reference. You will need to enter this MAC address in the corresponding Wireless Repeating Function screen of the other access point you are using.
- **Wireless Repeater.** If your modem router is the repeater, select this check box.
- **Repeater IP Address.** If your modem router is the repeater, enter the IP address of the other access point.
- **Base Station MAC Address.** If your modem router is the repeater, enter the MAC address for the access point that is the base station.
- **Wireless Base Station.** If your modem router is the base station, select this check box.
- **Disable Wireless Client Association.** If your modem router is the base station, selecting this check box means that wireless clients cannot associate with it. Only LAN client associations are allowed.
- **Repeater MAC Address (1 through 4).** If your modem router is the base station, it can act as the “parent” of up to 4 other access points. Enter the MAC addresses of the other access points in these fields.

Set Up a Point-to-Point Bridge

In point-to-point bridge mode, the modem router communicates as an access point with another bridge-mode wireless station. As a bridge, wireless client associations are disabled. Only wired clients can be connected. Use wireless security to protect this communication. The following figure shows an example of point-to-point bridge mode.

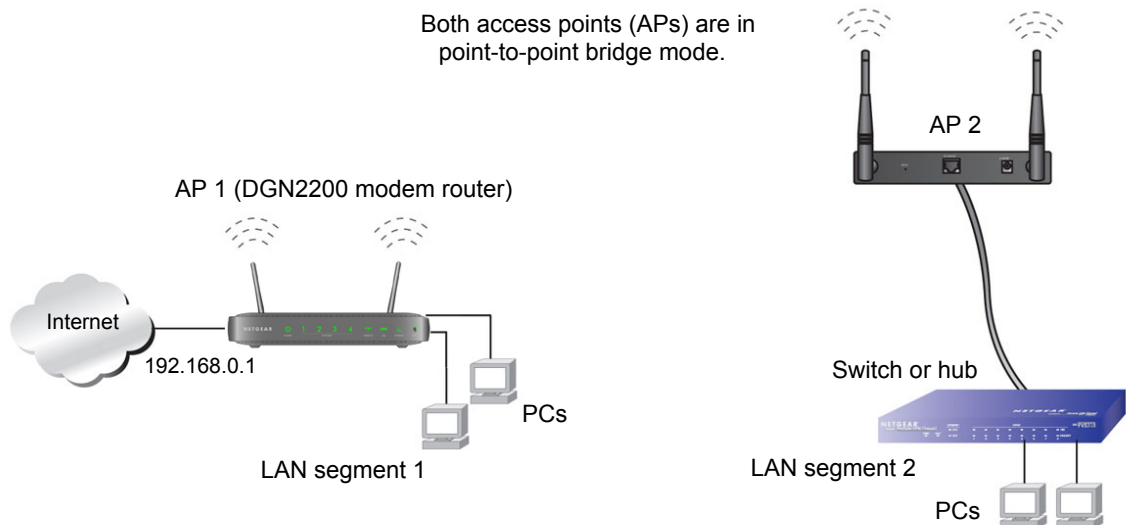


Figure 9. Point-to-point bridge example

➤ To set up a point-to-point bridge configuration:

1. Set up your modem router (AP 1) on LAN Segment 1 in point-to-point bridge mode.
 - a. In the Wireless Repeating Function screen, select the **Enable Wireless Repeating Function** check box.
 - b. Select either the **Wireless Repeater** or **Wireless Base Station** radio button.
 - c. Select the corresponding **Disable Wireless Client Association** check box.
 - d. Enter the MAC address for the other access point in the bridge. Depending on your selection in step a, use either the Base Station MAC Address field or the Repeater MAC Address 1 field.
 - e. Click **Apply**.
2. Set up the other access point (AP 2) on LAN Segment 2 in point-to-point bridge mode.

If your modem router is the repeater, then set up AP 2 as the base station; otherwise set up AP 2 as the repeater.
3. Set up both access points and verify that they use the same SSID, channel, authentication mode, if any, and WEP security settings if security is in use.
4. Disable the DHCP server on AP 2. AP 1 will then be the DHCP server.
5. Verify connectivity across LAN Segment 1 and LAN Segment 2. A computer on either LAN segment should be able to connect to the Internet or share files and printers of any other PCs or servers connected to LAN Segment 1 or LAN Segment 2.

Set Up a Multi-Point Bridge

Multi-point bridge mode allows a router to bridge to multiple peer access points simultaneously. Wireless client associations are disabled. Only wired clients can be connected.

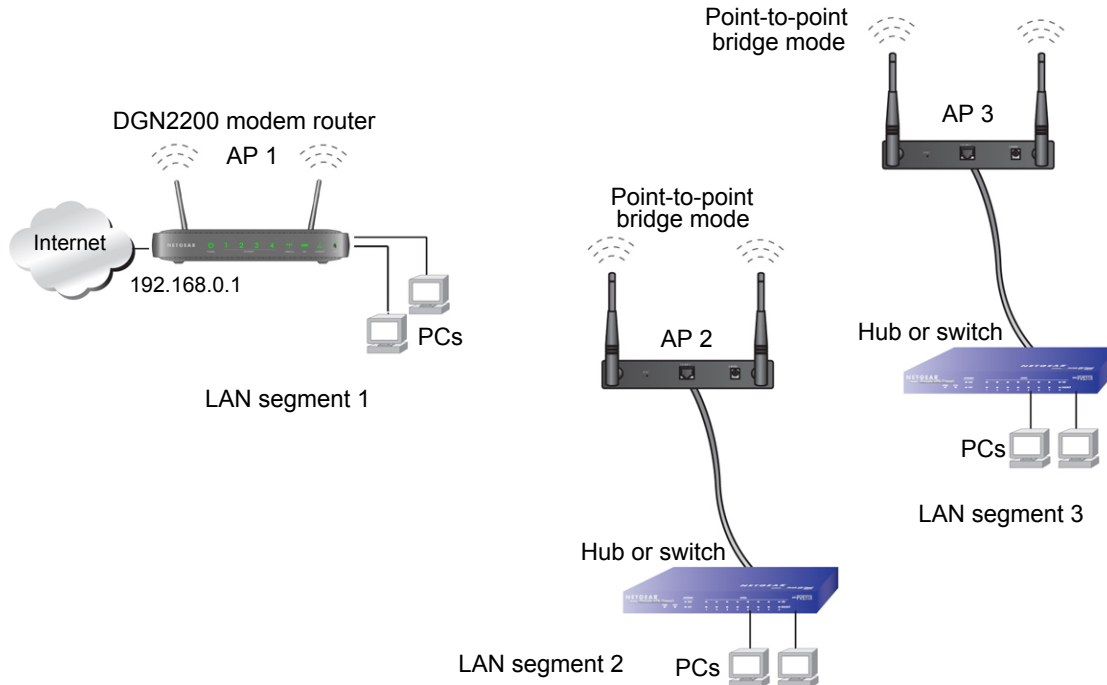


Figure 10. Multi-point bridge example

Multi-point bridge mode configuration includes the following steps:

- Set up the modem router for wireless repeating as the base station, and specify the MAC addresses of the access points that are repeaters.
- Set up the other access points for wireless repeating as repeaters, and specify the MAC address of the modem router as the base station.
- Use wireless security to protect this traffic.

➤ **To set up the multi-point bridge configuration:**

In this example, the modem router is AP 1 on LAN Segment 1 because it is in a central location.

1. Set up your modem router to be the base station in the bridge.
 - a. In the Wireless Repeating Function screen for your modem router, select the **Enable Wireless Repeating Function** check box.
 - b. Select the **Wireless Base Station** radio button.
 - c. Select the corresponding **Disable Wireless Client Association** check box.
 - d. Enter the MAC address for the other access points in the bridge in the Repeater MAC Address 1 and Repeater MAC Address 2 fields.
 - e. Click **Apply**.

2. Set up AP 2 and AP 3 to be wireless repeaters.
 - a. In the Wireless Repeating Function screen for AP 2 and AP 3, select the **Enable Wireless Repeating Function** check box.
 - b. Select the **Wireless Repeater** radio button.
 - c. Select the corresponding **Disable Wireless Client Association** check box.
 - d. Enter the MAC addresses for your modem router in the Base Station MAC Address field.
 - e. Click **Apply**.
3. Disable the DHCP server on AP 2 and AP 3. AP 1 will then be the DHCP server.
4. Verify the following for all access points:
 - The modem router and other access points operate in the same LAN network address range as the LAN devices.
 - Only one access point, your modem router in *Figure 10, Multi-point bridge example*, is set up as the base station. The others are set up as repeaters.
 - All access points, including your modem router, are on the same LAN. That is, all the access point LAN IP addresses are in the same network.
 - If you are using DHCP, all access points should be set as DHCP clients. This setting is **Obtain an IP address automatically (DHCP Client)** in the Basic Settings screen.
 - All access points, including your modem router, use the same SSID, channel, authentication mode, if any, and WEP security settings if security is in use.
5. Verify connectivity across the LANs. A computer on any LAN segment should be able to connect to the Internet or share files and printers with any other PCs or servers connected to any of the three LAN segments.

Note: Wireless stations configured as in *Figure 9* on page 94 cannot connect to the modem router or access points. If you want wireless stations to access any LAN segment, use additional access points in any LAN segment.

Repeater with Wireless Client Association

In the repeater mode with wireless client association, your modem router sends all traffic to a base station access point. You can set up the modem router as either the base station (parent) or as the repeater (child) access point.

Note that the following restrictions apply:

- You *do not* have the option of disabling client associations with this modem router.
- You cannot configure a sequence of parent-child APs. You are limited to only one parent access point, although if your modem router is the parent access point, it can connect with up to four child access points.

The following figure shows an example of a repeater mode configuration.

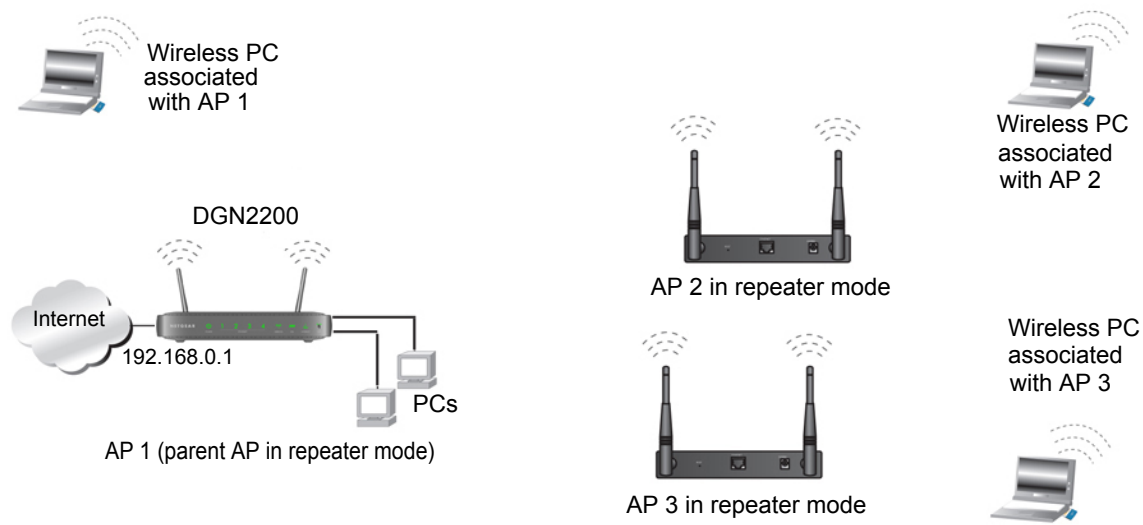


Figure 11. Repeater example

➤ **To set up a repeater with wireless client association:**

In this example, the modem router is the base station, but you can set it up to be the repeater with another AP as the base station if you want.

1. Set up your modem router to be the base station.
 - a. In the Wireless Repeating Function screen for your modem router, select the **Enable Wireless Repeating Function** check box.
 - b. Select the **Wireless Base Station** radio button.
 - c. Clear the corresponding **Disable Wireless Client Association** check box (make sure it is not selected).
 - d. Enter the MAC addresses for AP 2 and AP 3 in the Repeater MAC Address 1 and Repeater MAC Address 2 field.
 - e. Click **Apply**.
2. Set up AP 2 and AP 3 to be wireless repeaters.
 - a. In the Wireless Repeating Function screen for AP 2 and AP 3, select the **Enable Wireless Repeating Function** check box.
 - b. Select the **Wireless Repeater** radio button.
 - c. Clear the corresponding **Disable Wireless Client Association** check box (make sure it is not selected).
 - d. Enter the MAC addresses for your modem router in the Base Station MAC Address field.
 - e. Click **Apply**.
3. Verify the following for all access points:
 - Each access point operates in the same LAN network address range as the LAN devices.

- The access points are on the same LAN. That is, the LAN IP addresses for the access points are in the same network.
- If you are using DHCP, access point devices are set to **Obtain an IP address automatically (DHCP Client)** in the Basic Settings screen.
- Access point devices use the same SSID, channel, authentication mode, and encryption.

Verify connectivity across the LANs. A computer on any LAN segment should be able to connect to the Internet or share files and printers with any other PCs or servers connected to any of the three WLAN segments.

Change the Device Mode

The modem includes a built-in router. If you want to configure the modem as a “pure bridge” in Modem mode, first set up the Internet connection and then change the Device Mode setting to Modem mode. In Modem mode, the device acts as a “pure bridge” or DSL modem. When the device is in Modem mode, features that are not available are grayed out.

➤ To change the device mode:

1. Select **Advanced > Device Mode**. The following screen displays:

By default, the modem is in Router mode.

2. Select the device mode that you want from the drop-down list.
3. Click **Apply** so that your changes take effect.

8 Troubleshooting

8

Diagnosing and Solving Problems

This chapter provides information to help you diagnose and solve problems you might have with your modem router. If you do not find the solution here, check the NETGEAR support site at <http://support.netgear.com> for product and contact information.

This chapter contains the following sections:

- *Troubleshooting with the LEDs*
- *Troubleshooting the Internet Connection*
- *TCP/IP Network Not Responding*
- *Cannot Log in*
- *Changes Not Saved*
- *Incorrect Date or Time*

Troubleshooting with the LEDs

When you turn the power on, the power, LAN, and DSL LEDs should light as described here. If they do not, refer to the sections that follow for help.

1. When power is first applied, the Power LED lights.
2. After approximately 10 seconds, the LAN and DSL LEDs light as follows:
 - a. The LAN port LEDs light for any local ports that are connected.
 - b. The DSL link LED lights to indicate that there is a link to the connected device.
 - c. If a LAN port is connected to a 100 Mbps device, verify that the LAN port's LED is green. Note that if the LAN port is 10 Mbps, the LED is amber.

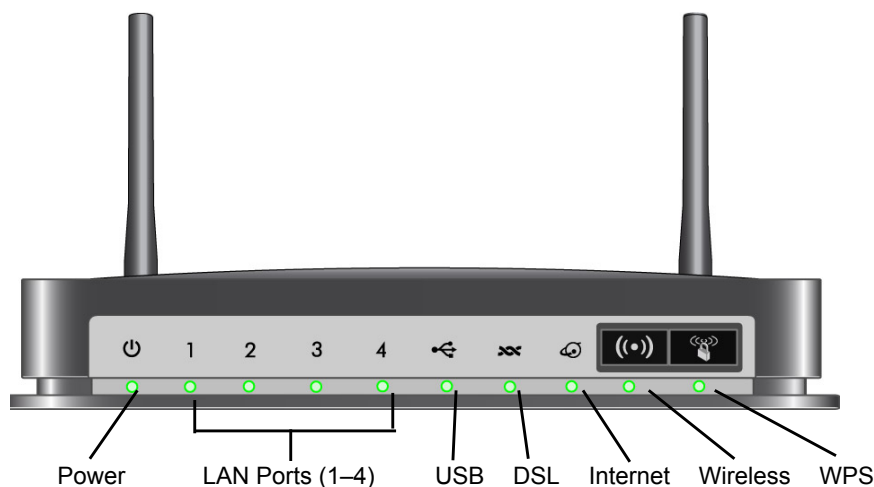


Figure 12. Front panel LEDs

Power LED Is Off

If the Power and other LEDs are off when your modem router is turned on:

- Check that the power cord is correctly connected to your modem router and the power supply adapter is correctly connected to a functioning power outlet.
- Check that you are using the 12 V DC power adapter supplied by NETGEAR for this product.

If the error persists, you could have a hardware problem and should contact NETGEAR Technical Support.

Power LED Is Red

When the modem router is turned on, it performs a power-on self-test. If the Power LED turns red after a few seconds or at any other time during normal operation, there is a fault within the modem router.

If the Power LED turns red to indicate a modem router fault, turn the power off and on to see if the modem router recovers. If the power LED is still red 1 minute after power-up:

- Turn the power off and on one more time to see if the modem router recovers.
- Clear the modem router's configuration to factory defaults as explained in [Factory Settings](#) on page 109. This sets the modem router's IP address to 192.168.0.1.

If the error persists, you could have a hardware problem and should contact NETGEAR Technical Support.

LAN LED Is Off

If the appropriate LAN LED does not light when the Ethernet connection is made, check the following:

- The Ethernet cable connections are secure at the modem router and at the hub or workstation.
- The power is turned on to the connected hub or workstation.
- You are using the correct cable.

Cannot Log In to the Wireless-N Modem Router

If you are unable to log in to the modem router from a computer on your local network, check the following:

- If you are using an Ethernet-connected computer, check the Ethernet connection between the computer and the modem router as described in the previous section.
- Make sure that your computer's IP address is on the same subnet as the modem router. If you are using the recommended addressing scheme, your computer's address should be in the range of 192.168.0.2 to 192.168.0.254.
- If your computer's IP address is shown as 169.254.x.x, recent versions of Windows and MacOS will generate and assign an IP address if the computer cannot reach a DHCP server. These auto-generated addresses are in the range of 169.254.x.x. If your IP address is in this range, check the connection from the computer to the modem router, and reboot your computer.
- If your modem router's IP address was changed and you do not know the current IP address, clear the modem router's configuration to factory defaults. This sets the modem router's IP address to 192.168.0.1. This procedure is explained in [Factory Settings](#) in Appendix A.
- Make sure that your browser has Java, JavaScript, or ActiveX enabled. If you are using Internet Explorer, click **Refresh** to be sure that the Java applet is loaded.
- Try quitting the browser and launching it again.
- Make sure you are using the correct login information. The factory default login name is **admin**, and the password is **password**. Make sure that Caps Lock is off when you enter this information.

Troubleshooting the Internet Connection

If your modem router is unable to access the Internet, you should check the ADSL connection, then the WAN TCP/IP connection.

ADSL Link

If your modem router is unable to access the Internet, you should first determine whether you have an ADSL link with the service provider. The state of this connection is indicated with the Internet LED.

ADSL Link LED Is Green

If your ADSL link LED is green, then you have a good ADSL connection. You can be confident that the service provider has connected your line correctly and that your wiring is correct.

ADSL Link LED Is Blinking Green

If your ADSL link LED is blinking green, then your modem router is attempting to make an ADSL connection with the service provider. The LED should turn green within several minutes.

If the ADSL link LED does not turn green, disconnect all telephones on the line. If this solves the problem, reconnect the telephones one at a time, being sure to use a microfilter on each telephone. If the microfilters are connected correctly, you should be able to connect all your telephones.

If disconnecting telephones does not result in a green ADSL link LED, there might be a problem with your wiring. If the telephone company has tested the ADSL signal at your network interface device (NID), then you might have poor-quality wiring in your house.

ADSL Link LED Is Off

If the ADSL link LED is off, disconnect all telephones on the line. If this solves the problem, reconnect the telephones one at a time, being sure to use a microfilter on each telephone. If the microfilters are connected correctly, you should be able to connect all your telephones.

If disconnecting telephones does not result in a green ADSL link LED, check for the following:

- Check that the telephone company has made the connection to your line and tested it.
- Verify that you are connected to the correct telephone line. If you have more than one phone line, be sure that you are connected to the line with the ADSL service. It might be necessary to use a swapper if your ADSL signal is on pins 1 and 4 or the RJ-11 jack. The modem router uses pins 2 and 3.

Internet LED Is Red

If the Internet LED is red, the device was unable to connect to the Internet. Verify the following:

- Check that your login credentials are correct, or that the information you entered on the Basic Settings screen is correct.
- Check with your ISP to verify that the multiplexing method, VPI, and VCI settings on the ADSL settings screen are correct.
- Check if your ISP has a problem—it might not be that the modem router cannot connect to the Internet but, rather that your ISP that cannot provide an Internet connection.

Obtaining an Internet IP Address

If your modem router is unable to access the Internet, and your Internet LED is green, you should determine whether the modem router is able to obtain an Internet IP address from the ISP. Unless you have been assigned a static IP address, your modem router requests an IP address from the ISP. You can determine whether the request was successful using the browser interface.

To check the Internet IP address from the browser interface:

1. Launch your browser, and select an external site such as www.netgear.com.
2. Access the main menu of the modem router's configuration at <http://192.168.0.1>.
3. In the main menu, under Maintenance, select **Router Status** and check that an IP address is shown for the WAN port. If 0.0.0.0 is shown, your modem router has not obtained an IP address from your ISP.

If your modem router is unable to obtain an IP address from the ISP, the problem might be one of the following:

- If you have selected a login program, the service name, user name, or password might be incorrectly set. See the following section, *Troubleshooting PPPoE or PPPoA*.
- Your ISP might check for your computer's host name. Assign the computer host name of your ISP account to the modem router in the browser-based Setup Wizard.
- Your ISP allows only one Ethernet MAC address to connect to Internet, and might check for your computer's MAC address. In this case, do one of the following:
 - Inform your ISP that you have bought a new network device, and ask them to use the modem router's MAC address.
 - Configure your modem router to spoof your computer's MAC address. This can be done in the Basic Settings screen.

Troubleshooting PPPoE or PPPoA

The PPPoE or PPPoA connection can be debugged as follows:

1. Access the main menu of the modem router at <http://192.168.0.1>.

2. Select **Maintenance > Router Status**.
3. Click the **Connection Status** button.
4. If all of the steps indicate OK, then your PPPoE or PPPoA connection is up and working.
5. If any of the steps indicates Failed, you can attempt to reconnect by clicking **Connect**. The modem router will continue to attempt to connect indefinitely.

If you cannot connect after several minutes, you might be using an incorrect service name, user name, or password. There also might be a provisioning problem with your ISP.

Note: Unless you connect manually, the modem router will not authenticate using PPPoE or PPPoA until data is transmitted to the network.

Troubleshooting Internet Browsing

If your modem router can obtain an IP address, but your computer is unable to load any Web pages from the Internet:

- Your computer might not recognize any DNS server addresses.
A DNS server is a host on the Internet that translates Internet names (such as www addresses) to numeric IP addresses. Typically your ISP provides the addresses of one or two DNS servers for your use. If you entered a DNS address when you set up the modem router, reboot your computer, and verify the DNS address. Alternatively, you can configure your computer manually with DNS addresses, as explained in your operating system documentation.
- Your computer might not have the modem router configured as its TCP/IP modem router.
If your computer obtains its information from the modem router by DHCP, reboot the computer, and verify the modem router address.

TCP/IP Network Not Responding

Most TCP/IP terminal devices and routers have a ping utility for sending an echo request packet to the designated device. The device responds with an echo reply to tell whether a TCP/IP network is responding to requests.

Test the LAN Path to Your Modem Router

You can ping the modem router from your computer to verify that the LAN path to your modem router is set up correctly.

To ping the modem router from a PC running Windows 95 or later:

1. From the Windows task bar, click the **Start** button, and select **Run**.
2. In the field provided, type **ping** followed by the IP address of the modem router, as in this example:

```
ping 192.168.0.1
```

3. Click **OK**.

You should see a message like this one:

```
Pinging <IP address> with 32 bytes of data
```

If the path is working, you see this message:

```
Reply from < IP address >: bytes=32 time=NN ms TTL=xxx
```

If the path is not working, you see this message:

```
Request timed out
```

If the path is not functioning correctly, you could have one of the following problems:

- Wrong physical connections
 - Make sure that the LAN port LED is on. If the LED is off, follow the instructions in [LAN LED Is Off](#) on page 101.
 - Check that the corresponding link LEDs are on for your network interface card and for the hub ports (if any) that are connected to your workstation and modem router.
- Wrong network configuration
 - Verify that the Ethernet card driver software and TCP/IP software are both installed and configured on your PC or workstation.
 - Verify that the IP address for your modem router and your workstation are correct and that the addresses are on the same subnet.

Test the Path from Your Computer to a Remote Device

After you verify that the LAN path works correctly, test the path from your PC to a remote device. In the Windows Run screen, type:

```
ping -n 10 IP address
```

where *IP address* is the IP address of a remote device such as your ISP's DNS server.

If the path is functioning correctly, replies as described in [Test the LAN Path to Your Modem Router](#) on page 104 display. If you do not receive replies:

- Check that your PC has the IP address of your modem router listed as the default modem router. If the IP configuration of your PC is assigned by DHCP, this information is not visible in your PC's Network Control Panel. Verify that the IP address of the modem router is listed as the default router.

- Check that the network address of your PC (the portion of the IP address specified by the netmask) is different from the network address of the remote device.
- Check that your cable or DSL modem is connected and functioning.
- If your ISP assigned a host name to your PC, enter that host name as the account name in the Basic Settings screen.
- Your ISP could be rejecting the Ethernet MAC addresses of all but one of your PCs. Many broadband ISPs restrict access by allowing traffic only from the MAC address of your modem, but some additionally restrict access to the MAC address of a single PC connected to that modem. In this case, configure your modem router to clone or spoof the MAC address from the authorized PC.

Cannot Log in

If you cannot log in to the modem router from a computer on your local network, check the following:

- The modem router is plugged in and it is on.
- You are using the correct login information. The login name is admin, and the password is password. Make sure that Caps Lock is off when you enter this information.
- If you cannot connect wirelessly, try an Ethernet connection and view the modem router wireless settings and set up your wireless computer with corresponding wireless settings.
- If you are using an Ethernet-connected computer, check the Ethernet connection between the computer and the modem router. The LAN LED for the port you are using on the modem router should light up to show your connection.
- Your computer's IP address is on the same subnet as the modem router. If you are using the recommended addressing scheme, your computer's address should be in the range 192.168.0.2 to 192.168.0.254.
- If the computer IP address is 169.254.x.x, recent versions of Windows and Mac OS generate and assign an IP address when the computer cannot reach a DHCP server. The auto-generated addresses are in the range 169.254.x.x. If your IP address is in this range, check the connection from the computer to the modem router and reboot your computer.
- If your modem router's IP address was changed and you do not know the current IP address, clear the modem router's configuration to factory defaults as explained in [Factory Settings](#) on page 109. This sets the modem router's IP address to 192.168.0.1.
- Make sure that your browser has Java, JavaScript, or ActiveX enabled. If you are using Internet Explorer, click **Refresh** to be sure that the Java applet is loaded.
- Try closing the browser and relaunching it.

Changes Not Saved

If the modem router does not save the changes you make in the modem router interface, check the following:

- When entering configuration settings, always click the **Apply** button before moving to another screen or tab, or your changes are lost.
- Click the **Refresh** or **Reload** button in the Web browser. The changes might have occurred, but the old settings might be in the Web browser's cache.

Incorrect Date or Time

Select **Security > Schedule** to display the current date and time. The modem router uses the Network Time Protocol (NTP) to obtain the current time from one of several network time servers on the Internet. Each entry in the log is stamped with the date and time of day. Problems with the date and time function can include the following:

- Date shown is January 1, 2000. This means the modem router has not yet successfully reached a network time server. Check that your Internet access is configured correctly. If you have just finished setting up the modem router, wait at least 5 minutes, and check the date and time again.
- Time is off by one hour. The modem router does not automatically sense daylight savings time. In the Schedule screen, select the **Adjust for daylight savings time** check box.

A Supplemental Information



This appendix includes the factory default settings and technical specifications for the N300 Wireless ADSL2+ Modem Router DGN2200v3, and instructions for wall-mounting the unit.

This appendix contains the following sections:

- *Factory Settings*
- *Specifications*

Factory Settings


You can return the modem router to its factory settings. On the bottom of the modem router, use the end of a paper clip or some other similar object to press and hold the Restore Factory Settings button  for at least 7 seconds. The modem router resets, and returns to the factory settings. Your device will return to the factory configuration settings shown in the following table.

Table 3. Factory Default Settings

Feature		Default Behavior
Router Login	User login URL	www.routerlogin.com or /www.routerlogin.net
	User name (case-sensitive)	admin
	Login password (case-sensitive)	password
Internet connection	WAN MAC address	Use default address
	WAN MTU size	1492
	Port speed	Autosensing
Local network (LAN)	LAN IP	192.168.0.1
	Subnet mask	255.255.255.0
	RIP direction	None
	RIP version	Disabled
	RIP authentication	None
	DHCP server	Enabled
Local network (LAN) continued	DHCP starting IP address	192.168.0.2
	DHCP ending IP address	192.168.0.254
	DMZ	Enabled or disabled
	Time zone	GMT for WW except NA and GR, GMT+1 for GR, GMT-8 for NA
	Time zone adjusted for daylight savings time	Disabled
	SNMP	Disabled
Firewall	Inbound (communications coming in from the Internet)	Disabled (except traffic on port 80, the HTTP port)
	Outbound (communications going out to the Internet)	Enabled (all)
	Source MAC filtering	Disabled

Table 3. Factory Default Settings (continued)

Feature		Default Behavior
Wireless	Wireless communication	Enabled
	SSID name	Can be found on the label on the bottom of the unit.
	Security	Can be found on the label on the bottom of the unit.
	Broadcast SSID	Enabled
	Country/region	United States (in North America; otherwise, varies by region)
	RF channel	Auto
	Operating mode	Up to 145 Mbps
	Data rate	Best
	Output power	Full
	Access point	Enabled
	Authentication type	Pre-Shared Key
	Wireless card access list	All wireless stations allowed

Specifications

Specification	Description
Network protocol and standards compatibility	TCP/IP, RIP-1, RIP-2, DHCP, PPPoE or PPPoA, RFC 1483 Bridged or Routed Ethernet, and RFC 1577 Classical IP over ATM
Power adapter	North America: 120V, 60 Hz, input
	UK, Australia: 240V, 50 Hz, input
	Europe: 230V, 50 Hz, input
	All regions (output): 12V @ 1.5A output
Physical	Dimensions: 6.80 in. x 5.03 in. x 1.28 in. (173 mm x 128 mm x 33 mm)
	Weight: 0.65 lbs. without the stand (0.29 kg)
Environmental	Operating temperature: 0° to 40° C (32° to 104° F)
	Operating humidity: 10% to 90% relative humidity, noncondensing
	Storage temperature: -20° to 70° C (-4° to 158° F)
	Storage humidity: 5 to 95% relative humidity, noncondensing
Regulatory compliance	FCC Part 15 Class B; VCCI Class B; EN 55 022 (CISPR 22), Class B
Network protocol and standards compatibility	TCP/IP, RIP-1, RIP-2, DHCP, PPPoE or PPPoA, RFC 1483 Bridged or Routed Ethernet, and RFC 1577 Classical IP over ATM
Power adapter	North America: 120V, 60 Hz, input
Regulatory compliance	FCC Part 15 Class B; VCCI Class B; EN 55 022 (CISPR 22), Class B
Interface specifications	LAN: 10BASE-T or 100BASE-Tx, RJ-45 WAN: ADSL, Dual RJ-11, pins 2 and 3 T1.413, G.DMT, G.Lite ITU Annex A hardware or Annex B hardware ITU G.992.5 (ADSL2+)

Notification of Compliance



NETGEAR Wireless Routers, Gateways, APs

Regulatory Compliance Information

Note: This section includes user requirements for operating this product in accordance with National laws for usage of radio spectrum and operation of radio devices. Failure of the end-user to comply with the applicable requirements may result in unlawful operation and adverse action against the end-user by the applicable National regulatory authority.

Note: This product's firmware limits operation to only the channels allowed in a particular Region or Country. Therefore, all options described in this user's guide may not be available in your version of the product.

Europe – EU Declaration of Conformity



Marking by the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards:

EN300 328 (2.4Ghz), EN301 489-17 EN60950-1

For complete DoC, visit the NETGEAR EU Declarations of Conformity website at:

http://support.netgear.com/app/answers/detail/a_id/11621

EDOC in Languages of the European Community

Language	Statement
Cesky [Czech]	<i>NETGEAR Inc.</i> tímto prohlašuje, že tento Radiolan je ve shode se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk [Danish]	Undertegnede <i>NETGEAR Inc.</i> erklærer herved, at følgende udstyr Radiolan overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erkläre <i>NETGEAR Inc.</i> , dass sich das Gerät Radiolan in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Eesti [Estonian]	Käesolevaga kinnitab <i>NETGEAR Inc.</i> seadme Radiolan vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, <i>NETGEAR Inc.</i> , declares that this Radiolan is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

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<p>Español [Spanish]</p>	<p>Por medio de la presente <i>NETGEAR Inc.</i> declara que el Radiolan cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.</p>
<p>Ελληνική [Greek]</p>	<p>ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ <i>NETGEAR Inc.</i> ΔΗΛΩΝΕΙ ΟΤΙ Radiolan ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.</p>
<p>Français [French]</p>	<p>Par la présente <i>NETGEAR Inc.</i> déclare que l'appareil Radiolan est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.</p>
<p>Italiano [Italian]</p>	<p>Con la presente <i>NETGEAR Inc.</i> dichiara che questo Radiolan è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.</p>
<p>Latviski [Latvian]</p>	<p>Ar šo <i>NETGEAR Inc.</i> deklarē, ka Radiolan atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.</p>
<p>Lietuvių [Lithuanian]</p>	<p>Šiuo <i>NETGEAR Inc.</i> deklaruoja, kad šis Radiolan atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.</p>
<p>Nederlands [Dutch]</p>	<p>Hierbij verklaart <i>NETGEAR Inc.</i> dat het toestel Radiolan in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.</p>
<p>Malti [Maltese]</p>	<p>Hawnhekk, <i>NETGEAR Inc.</i>, jiddikjara li dan Radiolan jikkonforma mal-htigijiet essenzjali u ma provvedimenti oħrajn rilevanti li hemm fid-Dirrettiva 1999/5/EC.</p>
<p>Magyar [Hungarian]</p>	<p>Alulírott, <i>NETGEAR Inc.</i> nyilatkozom, hogy a Radiolan megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.</p>
<p>Polski [Polish]</p>	<p>Niniejszym <i>NETGEAR Inc.</i> oświadcza, że Radiolan jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.</p>
<p>Português [Portuguese]</p>	<p><i>NETGEAR Inc.</i> declara que este Radiolan está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.</p>
<p>Slovensko [Slovenian]</p>	<p><i>NETGEAR Inc.</i> izjavlja, da je ta Radiolan v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.</p>
<p>Slovensky [Slovak]</p>	<p><i>NETGEAR Inc.</i> týmto vyhlasuje, že Radiolan spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.</p>
<p>Suomi [Finnish]</p>	<p><i>NETGEAR Inc.</i> vakuuttaa täten että Radiolan tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.</p>
<p>Svenska [Swedish]</p>	<p>Härmed intygar <i>NETGEAR Inc.</i> att denna Radiolan står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.</p>

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Íslenska [Icelandic]	Hér með lýsir <i>NETGEAR Inc.</i> yfir því að Radiolan er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.
Norsk [Norwegian]	<i>NETGEAR Inc.</i> erklærer herved at utstyret <i>Radiolan</i> er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 - 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

FCC Requirements for Operation in the United States

FCC Information to User

This product does not contain any user serviceable components and is to be used with approved antennas only. Any product changes or modifications will invalidate all applicable regulatory certifications and approvals.

FCC Guidelines for Human Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Declaration of Conformity

We, NETGEAR, Inc., 350 East Plumeria Drive, San Jose, CA 95134, declare under our sole responsibility that the N300 Wireless ADSL2+ Modem Router DGN2200v3 complies with Part 15 Subpart B of FCC CFR47 Rules.

Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

FCC Radio Frequency Interference Warnings & Instructions

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following methods:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an electrical outlet on a circuit different from that which the radio receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

N300 Wireless ADSL2+ Modem Router DGN2200v3

- For product available in the USA market, only channel 1~11 can be operated. Selection of other channels is not possible.
- This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

Industry Canada

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE: Radiation Exposure Statement:

RF exposure warning: The equipment complies with RF exposure limits set forth for an uncontrolled environment. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Caution:

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

NOTE IMPORTANTE: Déclaration d'exposition aux radiations:

Déclarations d'exposition aux RF liées Avertissement d'exposition RF: L'équipement est conforme aux limites d'exposition aux RF établies pour un environnement non contrôlé. L'antenne (s) utilisée pour ce transmetteur ne doit pas être co-localisés ou fonctionnant en conjonction avec une autre antenne ou transmetteur.

GPL License Agreement

GPL may be included in this product; to view the GPL license agreement go to <ftp://downloads.netgear.com/files/GPLnotice.pdf>.

For GNU General Public License (GPL) related information, please visit http://support.netgear.com/app/answers/detail/a_id/2649.

Interference Reduction Table

The table below shows the Recommended Minimum Distance between NETGEAR equipment and household appliances to reduce interference (in feet and meters).

Household Appliance	Recommended Minimum Distance (in feet and meters)
Microwave ovens	30 feet / 9 meters
Baby Monitor - Analog	20 feet / 6 meters
Baby Monitor - Digital	40 feet / 12 meters
Cordless phone - Analog	20 feet / 6 meters
Cordless phone - Digital	30 feet / 9 meters
Bluetooth devices	20 feet / 6 meters
ZigBee	20 feet / 6 meters

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